Department of Energy

Washington, DC 20585

June 2, 1997

The Honorable John T. Conway
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 700
Washington, D.C. 20004

Dear Mr. Chairman:

Enclosed is the Department's second quarterly status report on progress in implementing your Recommendation 94-3. The recommendation addresses the seismic safety of the plutonium storage building (Building 371) at Rocky Flats. This report is provided as committed in the Department's Integrated Program Plan (IPP) for the recommendation. It is responsive to the concerns you related in your letter of May 16, 1997, which addressed a need to assure timely progress in upgrading this important facility.

Two deliverables from the IPP were completed within their due dates. They are commitments 4-1 (select a material management alternative for high dispersibility residues) and 4-2 (integrate the selected alternative with site plans). These residues will be packaged in approved pipe components for disposition at the Waste Isolation Pilot Plant or for site storage in another building. Processing selections for residues will be proposed in a change to the implementation plan for Recommendation 94-1 (Plutonium Stabilization).

The development of an Authorization Basis for Building 371 has evolved from the plan outlined in the IPP. The development process has improved the quality of the safety basis dramatically. This basis may be determined to be adequate to support the remaining facility mission, eliminating the need for a second upgrade as projected in the IPP. Overdue commitments 3-3 (conformance with an updated Authorization Basis) and 3-4 (schedule for implementation of upgrades identified by the Authorization Basis) both depend upon completion of an interim safety basis for the revised facility mission. This Authorization Basis is now nearing completion and will support implementation of Recommendation 95-2 (Integrated Safety Management) in this facility.

This report acknowledges problems with the contractor's management control of intended safety upgrades in Building 371 and describes limited reorganization in support of improvements. We will continue our involvement in and oversight of the contractor's progress as you have suggested and will keep you informed.

Sincerely,

Alvin L. Alm
Assistant Secretary for
Environmental Management

Enclosure

cc:
Mark Whitaker, S-3-1

Attachment 1
18 pages

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE

DEFENSE NUCLEAR FACILITIES SAFETY BOARD RECOMMENDATION 94-3

SECOND QUARTERLY REPORT

May 1997

EXECUTIVE SUMMARY

This periodic report provides an update on progress and planning for implementation of the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-3. Recommendation 94-3 is about seismic and safety upgrades to the Rocky Flats' plutonium storage facility. The Department of Energy prepared and transmitted to the DNFSB an Integrated Program Plan (IPP) which made several commitments for future actions and decisions. Progress on those actions and results of decisions is reported in this second quarterly report.

Evaluation and selection of a material management alternative to address the risk from highly dispersible plutonium residues were completed on schedule. The selection has been integrated with site planning for consolidation, storage and residue stabilization. This completes IPP commitments 4-1 and 4-2. The selected strategy is to package the dispersible material in rugged pipe overpack containers (POCs) and store them in waste storage facilities.

Schedules and plans related to two overdue commitments from the IPP were revised. Commitment 3-3 is to implement an updated authorization basis in Building 371. A revised date for expected completion will be determined by September 10, 1997. Commitment 3-4 is to issue a schedule for further Building 371 upgrades which were identified in that authorization basis. This schedule will be issued by August 25, 1997.

The Building 371 Authorization Basis (AB) development for Building 371 fell further behind schedule, but substantial quality improvements are being made. The Building 371 draft AB, called a Basis for Interim Operations (BIO), was submitted to DOE's Rocky Flats Field Office (RFFO) in January as planned. The DOE review identified significant concerns which led to evaluation of additional accidents and the identification of additional safety controls. In response to comments from the Department, its contractor revised the AB delivery schedule. Completion is now planned for June 16, 1997. There is a strong commitment to meet this schedule and proceed with implementation.

Both the Department and its site contractors increased management attention to recommendation 94-3 implementation because of further delays in the development of the AB for Building 371, and because of a critical assessment of the facility safety upgrade designs. As previously reported, the Department has suspended efforts to build a new Plutonium Interim Storage Vault at this Site in recognition of a programmatic decision to store Site nuclear materials elsewhere, and to accelerate the shipment of materials from the Rocky Flats site. Because it will take some years to effect this plan, and because there remain some uncertainties in the schedule, priority safety upgrades will be made to the Site's Building 371 storage facility.

The Department reviewed its contractor's engineering designs for the Priority Safety Upgrades for Building 371 and identified several which were inadequate to meet the system functional objectives. The RFFO concluded that the individual projects were not being managed to meet the intent of the 94-3 IPP. Based on these findings, K-H made organizational changes to substantially strengthen the 94-3 implementation. The contractor is committed to recovery of the schedule for the priority upgrades and to ensure a substantial improvement in Building 371 safety by the end of 1997.

The Department decided to ship Rocky Flats plutonium to other sites for storage and disposition. This option selection was documented in the Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement on January 14, 1997. Decisions on proceeding with further upgrades in Building 371 will now depend upon progress toward off-site shipment. Building 371 remains an acceptable facility for interim storage of the Site's SNM pending shipment.

TABLE OF CONTENTS

1.0 PROGRAM ORGANIZATION

This section corresponds to section one of the IPP. It addresses key changes to the organization identified in that section and modified in the first quarterly report.

Gary Voorheis, K-H Vice President for Nuclear Operations has assumed full responsibility for 94-3 program implementation. He has designated Vic Pizzuto as the 94-3 program manager reporting directly to him. All aspects of the 94-3 program, including BIO completion through implementation, Building 371 upgrade projects, and the Interim Storage Vault (ISV) conceptual design, report directly to Vic Pizzuto. In addition, Stephen Additon, the principal author of the 94-3 IPP, is assigned full-time to support Vic Pizzuto and to head a proactive technical issues resolution team to ensure that a technically integrated systems engineering approach is maintained. The residue management function was not assigned to Vic Pizzuto only because the effort is substantially complete for the present time and because the effort has been integrated effectively into residue programs.

Joe Majestic (K-H) continues to head the Building 371 AB Team. He is managing the efforts of a team composed of K-H, Safe Sites of Colorado, and Mel Chew and Associates personnel to deliver the AB, the supporting system design descriptions (System Evaluation Reports), and the AB implementation plan. His team is working closely with the Rocky Flats Field Office AB-review team to close issues efficiently.

Mike Auble (K-H) has assumed the lead for upgrade project design/build management. Mary Jane Ross-Lee (RFFO), the lead for the upgrade assessment effort, is closely monitoring the technical integration recovery efforts.

2.0 BUILDING 371

This section corresponds with Section 3 of the IPP that focusses on "Goal 1: Establish safe operation of Building 371 in conformance with an updated Authorization Basis (AB)." The following Goal 1 Objectives are specifically addressed: "Provide an updated Building 371 AB, complete definition and implementation of necessary upgrades in Building 371, and establish building operations in conformance with the updated AB."

2.1 Accomplishments and Status Summary

2.1.1 Building 371 Authorization Basis (AB)

The Rocky Flats Environmental Technology Site (Site) continued to make progress toward the achievement of milestone 3-3, "Establish and document operation of Building 371 in conformance with an updated AB by December 1996." The Basis for Interim Operation (BIO) and the sixteen System Evaluation Reports (SERs) were submitted by K-H's contractors to the Department for review on January 30, 1997. The SERs are the system descriptions committed to in the 94-3 Implementation Plan. The initial RFFO review and the subsequent extended cross table discussions afforded substantially more comments than had been expected, and required substantial redevelopment. The BIO was not approved by

March 25, 1997, as had been scheduled. With the BIO delayed, the implementation plan for the completed BIO also fell behind its scheduled completion date of April 25, 1997. The reasons for and impacts of these delays are addressed under BIO detailed status below.

2.1.2 Building 371 Priority Safety Upgrades

Progress was continued toward completion of the Building 371 priority safety upgrades identified in Table 3-1 of the IPP. The design/build subcontractor completed the conceptual designs by the end of January, continued scoping studies on a few projects, and initiated detailed design on others to support a scheduled construction start in late May and early June for the lead construction projects. The status was summarized for the DNFSB Staff at their Site visit in mid-February. Shortly thereafter, RFFO directed a formal assessment of the priority upgrade project approach. The Assessment Report was issued on March 24, 1997, identifying numerous concerns. Assessment findings included conclusions that the system-engineering perspective had been lost on the 94–3 upgrade projects. The effort was not adequately integrated either between disciplines or with the unfinished BIO. K-H accepted the Assessment Report conclusions and acknowledged the resulting risk that the intent of the 94-3 upgrades might not be met on schedule; K-H agreed to develop a Recovery Plan. Initial steps in the Recovery Plan development included organizational changes, described fully under detailed status below, that were implemented in mid-April to substantially strengthen K-H 94-3 Program efforts consistent with increasing emphasis from RFFO. The impacts of these developments are also addressed under Priority Safety Upgrade detailed status below.

2.2 Detailed Status

2.2.1 Building 371 Authorization Basis (AB)

The new BIO development team, assembled by K-H as reported in the first Quarterly Report, completed the BIO and accompanying SERs and transmitted them to RFFO by January 30, as planned. Included was a revised set of Technical Safety Requirements (TSR) based upon the BIO. Numerous review comments challenged the adequacy of the BIO and SERs to support the proposed TSRs, and the adequacy of the proposed TSRs to protect workers and the public. Significant changes were needed and were initiated to cause this AB to conform to the intent of Recommendation 95-2 on integrated safety management.

The K-H team reorganized to affect BIO recovery, using an experienced subcontractor, Mel Chew and Associates, to support the facility operating subcontractor, Safe-Sites of Colorado (SSOC), in guiding BIO development. One significant failing of the draft

BIO had been failure to identify standards for safety management programs. RFFO had found this approach unacceptable and K-H committed in early February to work with RFFO to establish a "template" for an acceptable revision. The revised control set was provided by mid-March and afforded an acceptable basis for completion of the cross-table review.

The cross-table review resulted in a large number of specific comments to be incorporated in the BIO and several significant ones impacting the analyses and the already revised control set. The most significant issues accepted at the cross table involved: failure to evaluate a potentially serious fire accident involving inactive scrubbers in the ventilation exhaust (the DOE comments identified a credible chimney fire mechanism that substantially increased the challenge to the exhaust filtration and will require additional controls); the potential for more severe unmitigated fires; the need to develop explicit functionality criteria for the worker protection engineering features prior to BIO approval rather than as part of the implementation process as had been planned; and numerous additional changes to the ventilation Limiting Condition for Operation (LCO), including testing of two stages of High Efficiency Particulate Air filtration vs. one, provision for redundant exhaust fans (above minimum requirements), and greater minimum differential pressure in critical Zone III areas.

As soon as the cross table was completed, a schedule was developed to reflect the comment-resolution scope, resulting in a June 16, 1997, completion date for a revised BIO. The plan calls for close and frequent involvement of RFFO reviewers in the comment resolution process to ensure that the document being finalized is responsive to the outstanding comments and will not require another iteration of review and revision. The planned SER completion date is July 16, lagging the BIO due to the dependence of final SER changes on final BIO requirements. As the detailed scope of the effort required to establish functionality criteria for the worker protection safety systems is clarified, a check will be made to determine whether completion can be accelerated. The implementation plan schedule lags the SERs which are needed to prepare the plan; preparation is followed by K-H and then RFFO review. The planned completion date is September 10, 1997, which will also be reviewed as the effort proceeds to determine whether completion can be accelerated.

Both RFFO and K-H are disappointed that the BIO effort has again fallen behind schedule. Three considerations are judged to warrant attention: (1) is reasonable progress being made toward the desired assurance of safe building operation, (2) does the delay necessitate compensatory measures or other actions to ensure current facility safety, and (3) are the causes of delay sufficiently understood to minimize the risks of further impacts? Each of these is addressed below.

Progress toward assured safe building operation. While K-H and RFFO have disagreed about the specificity of controls best suited for ensuring safe and efficient facility operation, both agree that the emerging document affords sound bases for assuring safe operation of Building 371 during its risk reduction and storage missions and for implementing Integrated Safety Management (95-2) in Building 371. The involvement of the SSOC facility manager and of the building engineering manager, among others with operational responsibility, in the BIO development process bodes well for its effective implementation when completed. The facility manager is committed to completion of this BIO, viewing it as a required tool for establishment of efficient, safe facility operations with high availability for risk reduction work. The final product may be adequate to support the facility's use for remaining nuclear operations, potentially obviating the need to again revise this facility level document. Provision is made within this facility basis for its integration with a safety authorization basis for nuclear activities such as processing of waste per Recommendation 94-1.

Need for near-term compensatory actions to ensure safety. Throughout the BIO development process, participants with responsibilities for current nuclear safety in the facility have been alert for insights that might present an Unreviewed Safety Question for ongoing facility operations. Insights, such as the need for more effective combustible control, have also motivated action by the building staff to improve the safety of ongoing operations. Nevertheless, K-H and RFFO have agreed to assess all of the discrepancies between current facility controls, and between current operating practice or equipment status in the facility, and the new BIO controls as they are systematically identified during the process of implementation plan development. This integrated evaluation is to be completed as the BIO implementation plan is prepared. The need for compensatory measures to ensure current safety or increase safety margins pending delayed BIO implementation will be assessed and documented for implementation of any appropriate actions not already taken. A draft summary matrix will be prepared in May to reflect available information and to collect additional information as it is developed during implementation planning.

Understanding of causes of delay. The January draft BIO was developed by a process which melded portions of the DOE expectations for a BIO, SAR, and Integrated Safety Management. Since no single paradigm formed an agreed set of expectations, more closely coordinated consultation of the approval authority was merited. Frequent interaction with RFFO is expected to ensure that comment resolutions developed by the K-H BIO team will be accepted without significant iteration or rework.

The BIO implementation plan development also floundered initially, resulting in a judgement that the facility needed to assign more experienced personnel to the process and that too many complex activities were proceeding in parallel. New assignments of building personnel to the BIO implementation planning effort have been made and tested through development of pilot plan elements. It was decided that additional documentation was required of functionality criteria for worker protection safety systems. This decision, however, is expected to facilitate implementation since the functionality criteria which the plan must satisfy will now be available at the planning stage. Additional time for implementation planning has been scheduled following BIO completion to permit critical resources to be sequentially focussed. These steps provide considerable assurance that the implementation planning effort is now well founded.

Overall, K-H and RFFO are working together with a strong commitment to complete the BIO, by June 16, 1997, and then proceed promptly toward implementation. The BIO submitted on June 16 will be subject to final RFFO review and approval, but every effort will be made to utilize parallel reviews as the information is generated to minimize potential impacts of the final approval cycle.

2.2.2 Building 371 Priority Safety Upgrades

Progress was made toward completion of each of the Building 371 priority upgrades per the plan in the previous (first) Quarterly Report. The design/build subcontractor assembled a team of capable engineers, completed the defined conceptual design tasks by the end of January, continued scoping studies on a few projects, and initiated detailed design on others to support scheduled construction start in late May and early June for the lead construction projects. The status was summarized for the DNFSB Staff at their Site visit in mid-February.

On February 27, 1997, RFFO chartered an assessment of the approach being taken by K-H to implement the priority upgrades for Building 371. The assessment was completed and reported on March 24, 1997. The significant conclusions from the assessment included the following:

- The 94-3 Program implementation of the priority upgrades appeared to have lost the systems engineering perspective demonstrated in the IP phases and committed in the IPP; specifically, there appeared to be a focus on the specific hardware concepts listed as upgrades in the IPP without regard to the incremental safety functional capability that was to be achieved through their implementation.

- While there were specific implementation plans available for each of the upgrades, there was no comprehensive integrated plan that recognized, for example, the interplay between AB development and upgrade project requirements (i.e., did the AB credit the project as designed) or the need for complementary AB Implementation Plan activities to ensure an effective project (e.g., procedures or maintenance activities required to verify functional capability). In part, the impact of the AB schedule slippage appeared not to have been appreciated and factored into upgrade planning.

- Specific projects reflected insufficient integration between groups and disciplines at the Site; for example, fire protection engineering had differences of opinion about the value of or approach to certain projects, particularly where there were differences with the recently completed Fire Hazard Analysis.

- Specific projects appeared to be based on assumptions about their need, rather than engineering calculations (e.g., attic water piping upgrades were being developed without documented evidence of the attic structures' inability to accommodate potential floods). Other projects were proceeding with assumptions being made by the designer without apparent justification.

- The fact that no field work was underway in FY-97 raised concern that opportunities to expedite some projects for early field work had been missed and that the crunch to finish all projects at once would be a future problem.

Overall, the assessment findings raised concern that the schedule is at-risk for completion of the full scope of the priority upgrades that would be needed to establish the intended incremental safety functional capability for the systems within calendar 1997 as committed in the IPP.

In response to the assessment findings and to ensure prompt BIO completion and implementation, K-H reassigned 94-3 program responsibility at the Vice-Presidential level to Gary Voorheis, whose responsibilities include Site Nuclear Operations. Gary Voorheis has been involved with the 94-3 program efforts at the Site since K-H assumed the Integrated Management Contract, but had not been responsible for ensuring program performance. He now has that responsibility. To discharge it effectively, he has assigned the 94-3 Program Manager responsibility to his most experienced senior manager, Vic Pizzuto. Terry Camilleri has been appointed as Vic Pizzuto's deputy and will assist in overall program management.

All aspects of the 94-3 program, including BIO completion through implementation, Building 371 upgrade projects, and the ISV conceptual design, report directly to Vic Pizzuto. Joe Majestic (K-H) continues to head up the Building 371 AB Team. He is managing the efforts of a team composed of K-H, Safe Sites of Colorado, and Mel Chew and Associates personnel to deliver the AB, the supporting system design reports, and the AB implementation plan. His team is working closely with the RFFO AB-review team to close cross table issues efficiently. Mike Auble (K-H) has assumed the lead for upgrade project design/build management. Brac Melton continues as the ISV project manager through the completion of the conceptual design effort. The residue management function was not assigned to Vic Pizzuto only because the effort is substantially complete for the present time and because the effort has been integrated effectively into residue programs. In addition, Stephen Additon, the principal author of the 94-3 IPP, is assigned full-time to support Vic Pizzuto and to head a proactive technical issue resolution team. Nuclear Operations support organizations under Gary Voorheis and Engineering support under Wynn Harding have been aligned to support the 94-3 program as needed.

The RFFO organization for 94-3 has not changed although the program is receiving increased management attention and emphasis. Mary Jane Ross-Lee (RFFO), the lead for the upgrade assessment effort, has been assigned to monitor closely the technical integration recovery efforts.

Overall, the new K-H organization establishes clear responsibility for all 94-3 program elements and provides clear management line responsibility for deliverables with significantly less reliance on matrix relationships than the organization in Figure 2 of the IPP.

To address the assessment report findings, K-H's 94-3 Program developed a recovery plan. The recovery strategy continues to focus on specific capital projects, including the ones that had been identified from Table 3-1 of the IPP, but will ensure: that the BIO-required safety functional capabilities supported by those projects are clearly identified; that issues appropriately within the project scopes are identified and addressed by the projects; and that complementary activities needed to complete the full functional capability are included in BIO implementation planning. The technical issue resolution team will support the upgrade projects by focussing Site technical resources on appropriate issue resolution tasks, thereby resolving project scope uncertainties. All project scope and issue resolutions will focus on the BIO-required safety functions as defined in Administrative Control 5.9 and Chapter 6 of the BIO or, in more detail, in the SERs. This focus on safety functions will ensure that a system engineering perspective is maintained.

Consistent with discussions with the DNFSB Staff in April, the scopes of the IPP Table 3-1 tasks may require some changes in light of the BIO safety requirements. The final safety function of the ventilation isolation valves would not warrant seismic upgrades, if it remains as presently stated in the BIO, for example. As part of the Recovery Plan effort, the upgrade scopes will be reviewed, validated from a systems engineering perspective, and scheduled to achieve prompt, meaningful improvements in facility safety. In the process, some emerging BIO upgrades may be completed in parallel with validated scopes for the priority (IPP Table 3-1) upgrades and a few of the specific priority upgrades may be deferred if they do not support BIO-required safety functions.

2.2.3 Building 371 Safety-Margin Upgrades

The practicability and need for additional Building 371 upgrades depends upon the length of the storage mission duration and the scope of facility hazards during that period. Decisions on additional upgrades were identified in the IPP to depend upon progress toward construction of a new site plutonium storage facility, the Interim Storage Vault (ISV). Since ISV construction will not proceed (as previously reported), these decisions are now dependent upon progress toward shipment of nuclear materials from the site. IPP milestone 3-5 (a) addresses implementation of safety margin upgrades in Building 371 by September 1999. Appendix C of the IPP documents the safety margin upgrades that were identified during 94-3 Implementation Plan activities. The footnote to milestone 3-5 (a) identifies three conditions for reducing uncertainty on the ISV alternative that, if met, would warrant deferral of the safety margin upgrades for one year. The decision point on deferral is specified as September 1997, reflecting a judgement that the safety margin upgrades would require two full fiscal years to implement.

The criteria in the milestone 3-5 (a) footnote were explicitly based on the ISV because, at the time the IPP was written, the early off-site shipment of RFETS SNM was judged to be too uncertain to warrant any reliance upon it even though it was otherwise the preferred option for both the Site and the DOE. With the issuance of the Record of Decision for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement on January 14, 1997, this is no longer the case. Accordingly, Alvin Alm, the Assistant Secretary for Environmental Management, issued a memorandum in February terminating actions to proceed beyond conceptual design.

Because of these changes to plans, the DOE now expects to base the decision on possible deferral of the safety margin upgrades on objective evidence that the off-site option is progressing toward timely implementation. The DOE presently expects to consider these criteria in making such a decision by September 1997: actual shipments of material to Pantex and absence of obstructions to continuing shipment, design and planning at Savannah River Site

for the Actinide Packaging and Storage Facility to be constructed to accommodate RFETS material, and progress toward issuance of a Record of Decision for a plutonium disposition site that calls for immobilization of plutonium at SRS. This last criterion is a condition for transfer of RFETS material to SRS that is established in the January Storage and Disposition Record of Decision.

2.3 Deliverables

IPP Milestone 3-2 Report completion of priority safety upgrades specified in Table 3-1 by the end of 1997.

The recent RFFO Assessment Report has raised valid issues regarding the specific design/build scopes being implemented for the priority safety upgrades specified in Table 3-1. As part of the Recovery Plan effort, K-H will reassess the scopes to ensure consistency with BIO requirements, release sub-scopes to the field for construction as early as possible, and ensure significant safety improvement involving both Table 3-1 and BIO-defined upgrades by the end of 1997. A firm recovery schedule will be provided in the next report. Evaluation indicates that the December 1997 scheduled completion is achievable.

IPP Milestone 3-3 Establish and document operation of Building 371 in conformance with an updated AB by December 1996.

As explained in Section 1.2.1, this milestone is behind schedule and incomplete although substantial progress has been made toward completion of the BIO. As soon as the Implementation Plan for the BIO is developed (prepared though not yet approved by September 10, 1997), this milestone will be rescheduled. Basing the schedule on a firm Implementation Plan was a lesson learned when the original schedule was missed by a wide margin.

IPP Milestone 3-4 Issue schedule (implementation plan) for further Building 371 upgrades identified during the initial AB development by November 1996.

This milestone is, in part, driven by preparation of the implementation plan for the AB. Some further upgrades have been identified based upon the work performed to date, and these upgrades and their status are currently under evaluation. Any other upgrades identified in the development of the AB or its implementation plan will be included within the implementation plan for the AB. The current plan provides for identifying the schedule for these upgrades by August 25, 1997. This date is after the SERs are finalized and the Implementation Plan has been prepared for review and approval.

This is judged to be the earliest point in the schedule at which the schedule for implementing the upgrades can be finalized. Specific upgrades may be initiated sooner as design resources permit to ensure real improvements in facility safety by the end of 1997.

IPP Milestone 3-5 Report completion of other Building upgrades on the following Schedule:

The schedule for these upgrades is the IPP schedule unless and until DOE determines that sufficient assurance of an early off-site option for Site SNM exists to warrant deferral of the safety margin upgrades for one year as discussed in Section 1.2.3.

IPP Milestone 3-6 Reassess the need to complete the other upgrades and inform the Board by September 1998 (Milestone 3-6).

The reassessment will be an ongoing effort as decisions on the disposition of plutonium and oxides are reached. The need for these upgrades is dependent upon assurance of alternative off-site shipment or resumption of ISV design and construction. If either of these conditions is met, the upgrades will not be required.

2.4 Schedule of Activities

2.4.1 Building 371 Authorization Basis

The schedule of key milestones for completion of the AB includes:

- Complete Building 371 BIO with the DOE comments Resolved by 6/16/97.
- Complete SERs with Functionality Criteria by 7/16/97.
- Complete BIO Implementation Plan by 9/10/97.

2.4.2 Building 371 Priority Safety Upgrades

The schedule of key milestones for completion of the priority upgrades, including additional upgrades identified by the BIO and its Implementation Plan, includes:

- Issue K-H Recovery Plan responding to Assessment by 5/15/97

- Issue schedule (implementation plan) for further Building 371 upgrades identified during the initial AB development by 8/25/97. This is IPP milestone 3-4 rescheduled.

2.4.3 The DOE will determine by 9/30/97 whether the initiation of the safety margin upgrades should be deferred to FY-99.

3.0 INTEGRATED Pu CONSOLIDATION AND MANAGEMENT

This section corresponds with section 4 of the IPP, and follows the sequence of the Programmatic Elements in that section. The IPP states that, "The insights gained on the overall Site risk from residues and the effects of the decision to proceed with the priority Building 371 upgrades and a new ISV are to be integrated with the actions committed to the Board under Recommendation 94-1 to ensure an integrated Site plan for safe plutonium management and storage. System engineering principles will be used to develop a strategic plan for residue storage and shipment that incorporates timely consideration of contingencies, such as possible delays in Waste Isolation Pilot Plant (WIPP) opening."

3.1 Accomplishments and Status Summary

The evaluation of alternatives for achieving the IPP-required risk reduction for highly dispersible residues was completed, the conclusions were issued, and Site program plans to implement them were updated accordingly. The alternatives that were evaluated for risk reduction included either packaging in containers designed to provide the necessary safety and immobilization for safe storage or storage in a hardened facility with good seismic capacity, such as Building 371.

The evaluation estimated the timing of residue relocation to support planned 94-1 processing and identified a limited number of residue drums that should be consolidated into Building 371 prior to processing in order to reduce risk from residues as oxide consolidation from the affected facilities was completed. This consolidation also supports preparation for building closure. Estimates confirming Building 371 capacity to accommodate those drums were made.

After 94-1 processing, those residues that would be dispersible will be packaged WIPP-ready in pipe overpack containers, permitting storage in Butler-type buildings outside the Protected Area should WIPP shipment be delayed. To support use of these packages, a safety evaluation was performed and documented incorporating the previously completed testing of this package design. The evaluation concluded that, while the package could not be certified as Type-B because it is vented, it affords protection for the stored material from drop, dynamic crush and engulfing fuel fire hazards. Thus, the now planned use of POCs limits material quantities involved in accidents and permits

storage in unhardened and limited security facilities while substantially reducing the risk from these dispersible materials. Accordingly, unhardened buildings outside the protected area are recommended for storage of WIPP-ready drums should off-site shipments be delayed.

The overall residue evaluation also recommended some consolidation of untreated residues into Building 371 consistent with the schedule for special nuclear material (SNM) consolidation from the affected buildings. These plans will be updated as residue processing plans are finalized and actual processing rates are determined.

As a contingency, some rebaseline program options were investigated as were the storage requirements for some residues that may not meet current safeguards termination limits. As a byproduct of the study, comprehensive Site waste projections were prepared based on the planned residue programs. The conclusions were issued at the end of February and the supporting technical reports, including safety evaluation of the pipe overpack container, and confirmation of the incorporation into Site programs were provided in mid-April.

3.2 Detailed Status

The Residue Storage alternatives evaluation assessed the use of new and/or existing facility storage capability to recommend a strategy for pre-stabilization residue storage and post-stabilization waste storage prior to off-site shipment. The alternatives were to provide for storage contingencies should WIPP availability be delayed. The evaluation considered storage alternatives using existing or new facilities and two packaging configurations to relieve the present and future onsite storage limitations. The analysis integrated efforts to develop a Transuranic (TRU) and Transuranic Mixed waste work off plan with plutonium consolidation and stabilization.

The evaluation employed a complex manual simulation of material flows given expected processing schedules, rates and priorities. The resulting time-dependent inventories supported determination of instances where residues remaining in a building would dominate risk for that building as all other material had been removed. In these instances, pre-processing consolidation of remaining residues was recommended for the affected facilities (Buildings 771 and 776/7). The completed safety evaluation of the pipe overpack container demonstrated that it would suffice to protect dispersible materials provided storage was in waste management facilities (the packages are actually more vulnerable in hardened facilities should they fail since much larger structural masses can lead to impact loads greater than even these robust packages can withstand). Waste management facilities

outside the Site Protected Area afford a practical alternative for WIPP-ready waste storage should WIPP availability be delayed.

3.3 Deliverables

IPP Milestone 4-1 Evaluate and select material management alternatives for "high-dispersibility" residues by February 28, 1997.

This deliverable, as explained above, was completed on schedule.

IPP Milestone 4-2 Incorporate selected residue alternatives into existing Site programs by April 15, 1997.

The Site Integrated Stabilization and Management Plan (SISMP), Version 6.0, dated March 31, 1997, incorporated the 94-3 residue management recommendations including pre-stabilization drum removals from Buildings 771 and 776/7 to Building 371, utilization of the pipe overpack container for the TRU waste from dispersible residues after processing, and storage of WIPP-ready waste packages in waste management facilities as necessary outside of the Protected Area. Appropriate updates to these recommendations will be made as changes occur in planning for residue stabilization and building closure at the Site.

IPP Milestone 4-3 Establish and document interim storage for the Site's plutonium inventory, including residues, by the end of FY02 in a configuration that reduces Site risk due to Pu (metal, oxides and residues) to a level that is a small fraction of the risk from current Pu holdup.

This milestone is considered to be on schedule.

3.4 Schedule of Activities

All current activities related to this task are governed by the SISMP and 94-1. There are no near-term milestones for the 94-3 program.

4.0 INTERIM STORAGE MISSION

This section corresponds with Section 5 of the IPP and addresses the following mission need: "provide safe and secure interim storage of the Site's plutonium metal and oxide inventory, including pits (if still onsite) and any oxide generated due to residue and solution stabilization activities. The interim storage mission is to continue until the inventory is shipped off-site (goal is no later than 2015)." Chapter 5 focusses on plans to perform an environmental impact evaluation for an ISV, complete predecisional activities,

and base any further action (such as ISV design, construction and operation) on the NEPA outcome.

4.1 Accomplishments and Status Summary

The ISV conceptual design has advanced to approximately the 90% complete point and an independent evaluation is planned in April. The classified preliminary vulnerability assessment was completed by Sandia National Laboratory. The application of site screening criteria, including geotechnical screening considerations, led to the selection of a new site west of Building 460 as preferable to the pre-conceptual study site west of Building 130.

The DOE issued the Record of Decision (ROD) for the Storage and Disposition of Weapons-Usable Fissile Materials Final Programmatic Environmental Impact Statement on January 14, 1997. In this Storage and Disposition ROD, the DOE concluded that SNM should be shipped to Pantex and SRS and thus not require interim storage at Rocky Flats. The DOE elected to make early off-site shipment the preferred option for the ten-year planning that was to integrate programs throughout the DOE complex. As a result, Alvin Alm, the Assistant Secretary for Environmental Management, issued a memo in February suspending the ongoing preparation of an Environmental Impact Statement for the ISV (while keeping the option open to recommit to the effort if necessary) and took other actions to prepare for early shipment of SNM to Pantex and SRS.

4.2 Status

The schedule for the ISV was developed under the expectation that the formal conceptual design of the ISV would commence in the first quarter of FY97. The work was initiated as scheduled, and a Conceptual Design Report (CDR) for the ISV suitable for solicitation of an Architecture-Engineering firm to perform Title design is expected to be completed by the Integrating Management Contractor no later than August 1997.

4.3 Deliverables

Specific deliverables specified by the IPP and the status of each, as related to the ISV are presented below.

IPP Milestone 5-1 Complete NEPA evaluation of alternatives for interim storage by May 1997.

The DOE has terminated efforts to pursue the ISV NEPA evaluation in view of the Record of decision from the Programmatic Environmental Impact Statement.

IPP Milestone 5-2 Provide ISV design documents, including design criteria, as they are developed and no later than prior to the start of detailed design, including: functional design requirements; and predecisional design reports and drawings. Provide detailed design plans, calculations, drawings and specifications when developed if a decision is made to proceed.

The ISV Conceptual Design Report (CDR) will be provided to the DNFSB when it has been reviewed and found acceptable by the Department. The CDR is scheduled to be provided to RFFO by the Integrating Management Contractor no later than August 1997.

4.4 Schedule of Activities

The scheduled date for completion of the ISV conceptual design is August 1997.